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UNIVERSITY PREPARATION OF TEACHERS FOR HIGH SCHOOLS

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The data presented here were obtained from written statements prepared by 100 University of Kansas students in the last semester of their Senior year. Each student was a candidate for the University teacher's diploma, which grants the privilege of teaching in any accredited high school in the state.

For two years continuous work had been going on in organizing and administering "special-method courses." Each such course was for the purpose of giving specific preparation to teach a particular subject in high school. The object of this study is to get some definite information as to what such courses actually did to prepare prospective high-school teachers for their specific professional work.

The method of procedure was, first, to give these 100 students a list of typewritten questions. They were asked by the persons in charge of their practice teaching to take the list with them and return written answers. They were told that the answers submitted would have nothing to do with the grade they were to receive. They were to take such time as they wished. Among the questions in this list were the following:[1]

1. How many hours per week did you meet in each course?
2. What was the length, in weeks, of each course?

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[1] The writer is indebted to W. D. Reeve and Charles J. Pieper for the list of questions and for beginning the investigation.

3. What fractional part of the course was spent in discussion of subject-matter?

4. What fractional part of the course was spent in discussion of historical material?

5. What fractional part of the course was spent in discussion of methods?

6. What impression did the instructor leave with you concerning the purpose and value of his subject in secondary schools?

7. How do *you* justify the retention of the subject you are teaching, in secondary work?

8. How many lesson plans were you required to prepare in each course?

9. What written form or organization did you use for these lesson plans?

10. How many periods did you spend in visitation of high-school classes? How many of these were required?

11. Were you required to report in any of these visits (oral or written)?

12. Did the class in methods discuss questions of actual classroom procedure observed during the visits?

13. Did your class consider the question of suitable textbooks? If so, what was your method of selecting these texts and which texts did you choose as most suitable?

14. Did you discuss how the special conditions of any community should determine the content of your subject in high-school courses?

15. Did you formulate a course of minimum essentials in your subject?

16. Was there any discussion of special methods for the slow and rapid workers?

Table I contains the tabulation of 47 answers to the foregoing questions. These answers were selected at random except that they were chosen so that each special-method course which had been given to any of these 100 students would be represented, and when possible represented by answers from at least two or more students.

TABLE I

Data Concerning Special Method Courses

Subject	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
English	8	6	¾	0	¼	Not raised	......	0	......	0	......	......	*n*	*y*	......	......
"	3	18	......	0	......	Primary	None necessary	8	Suggested	9	7*r*	*y*	*y*	*n*	*n*	*y*
"	3	18	......	......	Almost all	No defense	......	......	......	......	......	......	......	......	......	......
"	3	18	1/10	0	9/10	One of importance	Fundamental	0	......	4*r*	4*r*	*y*	*y*	*y*	*y*	*y*
Mathematics	2	18	⅓	0	⅔	......	For higher mathematics	1	......	15*r* 20	*n*	*y*	*y*	*n*	*y*	*y*
"	2	18	⅓	0	⅔	Definite	Practical	1	Subj.-matter & method	24	Pres. *or* ab	*y*	*y*	*y*	*y*	*y*
"	10	6	½†	0	½—	Utility culture tool	Necessary tool	1	......	0	0	0	*n*	*y*	*n*	...
"	2	18	Little	Little	Almost all	......	Questionable	1	Aim subject method	18*r*	0	*y*	*n*	*n*	*y*	*n*
"	2	18	......	......	All	Necessary	Practical training	1	McMurry	18*r*	*y-or*	*y*	......	*n*	*y*	*y*
"	1½	18	¼	½	¼	Necessary	Utility and social value	0	......	*or* 1	0	0	*y*	*n*	*n*	...
"	1	18	⅙	⅔	⅙	Training—Method	Mental discipline	0	......	0	......	......	*y*	*n*	*n*	*y*
"	8	6	¾	¼	0	Thought-training—	Clear mind	1	any	0	......	......		*y*	*y*	*n*

						practical									
"	1	18	⅙	⅔	⅙	Mental drill	Mental drill	0	0	*or*	*n*	*n*	*y*	*n*	*y*	*n*
"	2	18	¼	0	¾	Thought-training	Necessary thought-training	1	any	1*r* 2	*or*	*y*	*y*	*y*	*y*	*y*
"	1	18	0	¾	¼	Practical	...	0	...	0	...	...	*y*	*y*	...	*y*
"	1½	18	All	0	0	Negative	Important	0	0	0	*n*	*n*	Super	...	*n*	*n*
Biology	3	36	⅕	⅕	⅗	Interesting	...	0	...	0	0	0	*y*	*y*	*n*	...
"	3	36	...	...	...	Mental operations	...	0	...	0	...	...	*y*	*n*	*y*	*y*
"	3	36	All	0	0	Important	...	1	...	0	0	...	...	*y*	*y*	*y*
"	3	36	All	0	0	Important method	...	0	...	0	0	0	*y*	*n*	*n*	*n*
"	3	2	All	0	0	...	...	0	...	0	*n*	*n*	*y*	*n*	*n*	*n*
Physics	1	18	...	0	0	Training the intelligence	...	0	...	0	...	...	*y*	*n*	*n*	*n*
"	2	18	...	...	...	...	...	0	0	*or*	*n*	*n*	*y*	*n*	*n*	*n*
"	2	18	21/24	1/24	1/12	*Not raised*	...	0	0	0	*n*	*n*	*y*	...	*n*	*n*
Chemistry	2	18	⅔	0	⅓	Training the intelligence	...	15	Quest. and ans.	0	...	...	*y*	*n*	*n*	*y*
"	2	18	¾	0	¼	None	...	4	Quest. and ans.	0	...	...	*n*	*n*	*n*	*n*
"	1	18	⅓	...	⅔	Culture—important	...	...	Quest. and ans.	0	*n*	*y*	*n*	...	*n*	*n*
"	15	6	⅓	⅓	⅓	Essential	...	30	...	...	*n*	...	*n*	*y*	...	*n*
Botany	3	36	½	0	½	Important	...	0	...	3*r*	*n*	...	*n*	*y*	...	...
"	3	36	⅔	0	⅓	Important	...	5	...	1*r* 3	*n*	*y*	*y*	*y*	*y*	*y*
"	10	6	½	0	½	Utmost	...	1	0	0	*n*	*n*	...	...	...	...

TABLE I (continued)

DATA CONCERNING SPECIAL METHOD COURSES (continued)

SUBJECT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
						importance										
History	2	36	⅛	0	⅞	Training for citizenship	...	0	...	1 *or*	...	...	*y*	*n*	*n*	*n*
"	2	36	Some	Some	Some	...	...	0	...	0	*n*	*n*	*y*	*n*	*n*	*n*
"	2	36	½	½	0	Essential	Important	0	...	0	*n*	*n*	*n*	*n*	*n*	*n*
Man. Train.	1	36	⅖	⅕	⅖	Appreciation	...	2	Thorndike	8	*or*	*y*	*y*	*y*	*y*	...
Technique of teaching	3	18	...	¼	¾	...	...	4	None	...	...	...	...	...	...	...
"	3	18	⅓	⅓	⅓	Professional help	...	18	Strayer	4*r*	Written 4	...	...	...	...	...
Principles of teaching	3	18	Some	Some	Some	Individual needs	...	...	...	...	...	...	...	...	...	...
Latin	3	18	½	0	½	Culture	...	...	...	0	...	...	...	*n*	...	...
"	3	36	Large	Small	Small	Gives a list	Questionable	0	...	0	0	...	*n*	*n*	*n*	*n*
German	1	36	...	...	...	...	...	...	...	12	...	...	...	...	...	...
"	1	36	...	...	...	Culture—practical	...	0	...	13 12*r*	*y*—pres. or ab.	*n*	*y*	*n*	*n*	*n*
"	1	18	...	...	...	...	...	...	...	30*r* 36	*n*	*y*	...	*y*	...	*y*
French	1	36	⅔	0	⅓	...	...	...	...	0	0	0	*y*	...	*n*	...
"	1	36	⅔	0	⅓	Culture	...	1	Outline	0	...	...	*y*	*n*	*n*	*n*
Norwegian	2	18	...	...	...	...	...	...	...	*y-r*	*y or*	*y*	*y*	...	...	*n*
Swedish	2	18	⅓	⅓	⅓	...	...	0	...	...	...	...	...	...	...	...

* *r*=required; *or*=oral or orally; *y*=yes; *n*=no.

The four lists of answers on courses in English report on special-method courses given by two instructors.

The twelve lists in mathematics report on three instructors.

The five lists in biology report on one instructor.

The three lists in physics report on one instructor.

The four lists in chemistry report on two instructors.

The three lists in botany report on two instructors.

The three lists in history report on one instructor.

The two lists in technique report on two instructors.

The two lists in Latin report on one instructor.

The three lists in German report on one instructor.

The two lists in French report on one instructor.

The two reports in Norwegian and Swedish report on one instructor.

Adding to this list the single reports in the courses in manual training and principles of teaching, we have a total of eighteen instructors whose courses in special method are reported on in Table I.

The first striking feature is the varying amount of time taken by the several courses. The total number of recitations ranged from 18 in three courses in mathematics and 1 each in physics and chemistry, to 108 in all courses in biology, in two courses in botany, and in one course in Latin. The number between range from 27 in two mathematics courses to 90 in one chemistry course. Compared group by group, the science courses in special method demanded more recitation periods than the courses in any other group. Nor does the explanation of this lie in the possibility that these hour say have includedm laboratory periods. They did not except possibly in the cases of six-week (that is, summer) courses in chemistry and in botany. Furthermore, these summer courses did not demand as many recitation hours, though they may have included some laboratory time, as did other similar courses in science in which only the regular single period per recitation is counted.

Does it take two or three times as long to make college students proficient in methods of teaching history as in those of teaching mathematics? Or does a student need to spend twice as much recitation time to acquire his technique of teaching biology as of teaching English? In these terms of measurement botany is three times as difficult as a modern foreign language. It is impossible to answer accurately such questions as those just raised, but the widely varying amounts of time taken by these groups represented lead one to think that the question of time-values in preparation for special technique had never been raised.

This impression is confirmed when one examines certain of these groups separately. Leaving out of account for the present the courses offered during summer sessions, we find that within the department of mathematics special-method courses during two years have demanded 18, 27, or 36 hours recitation of the student, depending solely upon the time at which he happened to enrol for this work. In physics the same instructor has tried doubling the time required to obtain presumably the same result. Indeed, the simple fact of the whole situation, as far as time expenditure is concerned, is that there is an entire lack of what can be termed standardization, as represented in the courses here reported on.

It may be objected, and perhaps truthfully so, that certain courses in special method give better training in specific teaching technique in 18 lessons than other courses do in 108 lessons. Some light is shed on this problem in the answers listed in columns 3, 4, and 5. From these answers it is evident that few courses spent much time in the discussion of (4) historical material, although certain courses in mathematics have devoted three-fourths of their time to this phase. There is far less agreement, however, in the division of time between the discussion of (3) subject-matter and of (5) methods of teaching. Two courses in English and two in mathematics spent almost all of their time on the last, while one in mathematics, three in biology, one in physics, one in botany, and one in Latin gave nearly the whole emphasis to subject-matter. Of the remainder, more stressed subject-matter than method, while still more were divided equally between these two. These facts, together with a careful study of the table, show that the length of a course in special method is no indication of where the emphasis is being placed in that course by the instructor. He may be taking his class in a review of the subject-matter, he may be going into the historical aspects of the subject's development, or perhaps he is really attempting to accomplish what the title of his course indicates.

This study is not interested in the nature of the discussion of the subject-matter, nor of the historical foundations. It is seeking data on the presentation of methods of teaching. Further light is given in the answers to questions Nos. 8–12 inclusive. Thirty-four of the 47 give answers as to whether any sort of written lesson plans were required. Twenty of the 37 students were not required to write any; 12 were required to write one each; 1 wrote two; 2 wrote four; 1, five; 1, eight; 1, fifteen; 1, eighteen; and 1, thirty. And of these 20, slightly more than a half-dozen were given definite instructions as to how to proceed with this technical task.

But possibly the instructors thought visitation of classes actually being taught would be better than mere making of plans. Of 39 answers whether such visits were required, 18 said they were and 21 said they were not. The number of visits required in each course ranged from one in a course of 72 periods to 18 in a course of 36 periods. Of the courses requiring these visits 5 required no reports to be made on observations and 2 asked students merely whether thay had visited. This leaves among 39 cases a possibility of only 11 chances of there being any discussion of visits made to high-school classes. On the other hand, 10 reports said that the class in method discussed questions of actual classroom procedure observed during visits, and 10 said such questions were not discussed.

It seems quite evident that the special-method courses given by the eighteen instructors reported on gave only very minor consideration to the technique of specific preparation for classroom instruction and made scarcely any attempt to familiarize students to any degree with actual practices pursued by high-school teachers.

Column thirteen states whether these courses considered "the question of suitable textbooks." Twenty-eight answers say "yes"; 9 say "no"; and 7 answers are lacking. After reading the answers given by students to this question one cannot refrain from warning the reader that the foregoing information does not give any clue to the value of this consideration, when present, to the students. One answer stated, for example, that they "considered the textbooks according to the experience the professors had had with them." Another answer said, "In selecting a textbook, Mr. ——— told us to select a text that emphasized the side of [subject] that we were interested in. . . . . We were supposed to use our own judgment in such choices." A number of other answers could be quoted to show that students were obviously given no standards for judging texts even where the question of suitable ones was considered.

Column fourteen shows the extent to which the community needs were given any recognition in the special-methods courses. Fourteen answers say "yes"; 20 say "no." Again the reader is warned that "yes" is no measure of the value of such consideration to future teachers. One student gave such an answer and then added that all his class had been told was that a certain foreign language should not be taught in a German community.

Question No. 15 also deals with the curriculum: Was a course of minimum essentials formulated? Eleven answer "yes"; twenty-one, "no"; ten did not answer. Question No. 16 seeks to find out whether any attempt was made to prepare prospective teachers to deal specifically with individual differences in pupils. Thirteen answer "yes"; 19, "no"; 11 did not answer. It is interesting to notice that eight discussed special methods for the slow and rapid workers. Five of these eight were mathematics courses.

It must be acknowledged that there are certain possible sources of error in the foregoing data. The students who answered the questions may not have remembered the facts accurately, and hence their answers may be untrustworthy. Two methods were used to overcome this. First, the students were requested to take all the time they needed to formulate their answers. None of them had taken these courses more than a year before. Secondly, they were told that the questions were asked merely to get information and did not in any way help in arriving at any marks to be given the students.

Again it may be objected that the form of some of the questions did not permit of answers specific enough to serve as basis of conclusions. It is conceivable that some might urge this against the questions numbered 6, 9, 14, and 16. This would be a serious objection if the data had been narrowly interpreted. But the method pursued has been most liberal. In making the tabulation the answers have been given a "free translation" with a bias in favor of the instructor whenever there was any doubt, and in the foregoing discussion the analysis has in no instance attempted to give to the answer a content or meaning above what was originally intended. Of this the reader may, by his own critical reading, judge for himself. The answers in columns six and seven have not even been referred to up to this point.

Furthermore, it has already been pointed out that so far the investigation has limited itself almost wholly to questions of fact: Were lesson plans required? Did you visit classes? Did you report? Did you attempt to formulate a course in minimum essentials? and so on, through the list. In no case was the student asked to evaluate any part of the course which he had been given. The whole inquiry so far concerns the presence or absence of clearly defined elements in these special-method courses.

With this fundamental fact in mind one is justified in drawing the following conclusions from the foregoing data:

1. Either some courses consumed too much time or some took too little. It is quite probable that both conditions were true.

2. There was no clear idea in the minds of the instructors as to what type of content should be given in these courses.

3. There was an appalling lack in most courses of any attempt to prepare students to organize subject-matter for presentation to high-school classes.

4. There was almost no attempt to require students to familiarize themselves to any degree with current practice in teaching the several subjects in high schools, even though there was ample opportunity for this.

5. There was even less discussion of such procedure than there was observation of it.

6. The formulation of the minimum essentials in several subjects, the adaptation of these to the needs of the community and to those of the pupils to be taught, the consideration of the teacher's tool of instruction, the text,—each of these in most courses seemed to be judged unimportant or even nonessential.

The second set of data concerns only the inquiry raised in questions Nos. 6 and 7. At the end of the semester, when these 100 university students were ready to be graduated, i. e., to teach, each was asked to give her reasons why the subject she had been teaching should be given a place in the high-school curriculum. This question was asked of them in a final examination, but they had been told some time before that they might expect it. The answers of eighty-eight students were given in such form as to be usable in this study. These answers are presented tabulated in Table II.

TABLE II

Subject	Number of Students	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Total by Subjects
English	16	15	2	14	1	..	6	2	5	1	..	3	1	2	..	52
Mathematics	14	12	10	1	..	9	1	..	8	1	3	1	..	..	..	47
History	13	8	10	8	2	3	6	8	8	..	2	1	..	1	..	57
Science	17	17	5	3	..	7	2	..	6	..	7	..	..	..	1	48
Foreign language	31	25	17	21	..	3	8	1	16	2	3	..	..	..	..	96
Economics and Commercial geography	4	3	2	..	1	1	2	..	1	..	..	..	..	..	..	10
Music	2	1	1	..	..	..	1	..	..	..	1	..	..	..	..	3
Manual training	1	1	1	1	..	..	1	..	..	..	..	..	..	..	..	4
Total	88	82	48	48	5	23	27	11	44	4	16	5	1	3	1	318
Rank	....	1	2	2	8	5	4	7	3	9	6	8	11	10	11	

The numbers at the top of the columns correspond to the reasons as stated below:

1. Applied use.
2. Development obtained.
3. Culture.
4. Social values.
5. Technique or method acquired.
6. Appreciation.
7. Civic, moral, or ethical training.
8. Value in studying other subjects.
9. Good because the study of it is "hard discipline."
10. Has interest in it.
11. College-entrance requirement.
12. Individual values.
13. Ability in subject a measure of life-success.
14. Good for leisure.

The answers are presented from groups of students teaching in given fields such as science, English, etc. These answers are totaled.

The separate reasons listed are necessarily to a limited extent groupings of answers given. At the same time there has not been any attempt to make these statements of reasons logically exclusive one from another. A consistent effort has been made to retain the significance of each original statement.

In the divisions of English, mathematics, history, science, and foreign language enough answers are included to make the individual group data worth attention. Among these five "applied use" is ranked first in all but history, where "development" is given first place. "Culture" is ranked second in English, in history, and in foreign language, and in the last it is rated as equivalent to "applied use "to "civic, moral, and ethical training," and to "value in studying other subjects." "Interest" is given second rank in science and rated as equivalent to "technique or method acquired."

Including all reasons given by the 88 students for all subjects, the rankings, judged by the method of "number of times mentioned," are as follows:

1. Applied use.
2. Culture and social values.
3. Value in studying other subjects.
4. Appreciation.
5. Technique or method acquired.
6. Has interest in it.
7. Civic, moral, or ethical training.
8. Social values and college-entrance requirements.
9. "Hard discipline."
10. A measure of life-success.
11. Individual values and leisure.

It is very evident that the students whose answers furnished the data for Table II were not going to their teaching positions with clean-cut, cogent opinions as to why the subjects which they expected to teach should be taught high-school pupils.

Sound method begins with a clear statement of aim or goal to be achieved. This goal constitutes the only valid reason for procedure toward it. If the subject does not lend itself to an aim that stands the test of the purpose of the School, no selection of subject-matter or method of instruction can possibly overbalance this deficit. In fact, the three parts of method other than the determination of aim are dependent upon the aim. They are: (1) the selection, (2) the organization, and (3) the presentation of subject-matter so that the aim set up will be accomplished or reached.

The data presented give meager evidence that these fundamental principles of method have been thought of by the instructors in the special-method courses. No matter how great one's zeal, one looks almost in vain, among college instructors or among prospective teachers, for any evidence that the high school is thought of as the "people's school." A socialized school; a school, a course, a study, for community or for individual needs—these are ideas almost as lacking in college contemplation for high-school preparation as they are overwhelmingly necessary in actual secondary instruction and supervision.

In short, one seems perfectly justified in saying that as a whole these courses failed either to possess or to state a distinct aim for the several high-school subjects which they fathered. The Senior university students who took them failed lamentably to get a clear idea of what these subjects were expected to accomplish in specific terms for high-school pupils. And as for attacking problems of technique in selection, organization, presentation, and adaption, the courses betray a poverty that shows almost a total dearth of intelligent, sympathetic interpretation of the meaning or value of teaching in the modern secondary school in America.